

1521/206  
1601/206  
TRADE PRACTICE II  
June/July 2021  
Time: 8 hours



THE KENYA NATIONAL EXAMINATIONS COUNCIL

CRAFT CERTIFICATE IN ELECTRICAL AND ELECTRONIC TECHNOLOGY  
(POWER OPTION)

MODULE II

TRADE PRACTICE II

8 hours

**INSTRUCTIONS TO CANDIDATES**

*Each candidate will carry out ALL exercises as directed by the examiner.*

*Time allowed for each exercise is 2 hours.*

*Performance of each candidate will be assessed during and at the end of every exercise.*

*No circuit should be connected to **POWER** without the approval of the examiner.*

*All dimensions are in millimetres.*

*All installation work should be carried according to relevant IEE regulations.*

**This question paper consists of 5 printed pages.**

**Candidates should check the question paper to ascertain that all the pages are printed and that no questions are missing.**

1. (a) **Figure 1 (a)** shows the layout of equipment at the consumers intake point. The control gear equipment is pre-installed on a wooden surface.

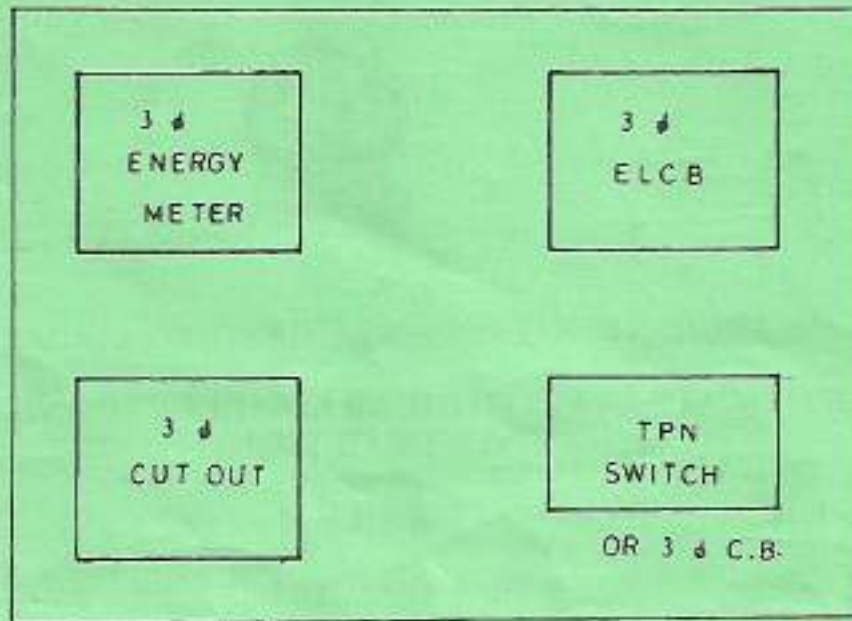


Fig 1 (a)

- (i) Draw the wiring diagram of the layout in the correct sequence;
- (ii) Wire the equipment at the consumers intake point in the correct sequence. (10 marks)
- (b) **Figure 1(b)** shows the alyout of three final circuits. The distribution board is pre-installed.

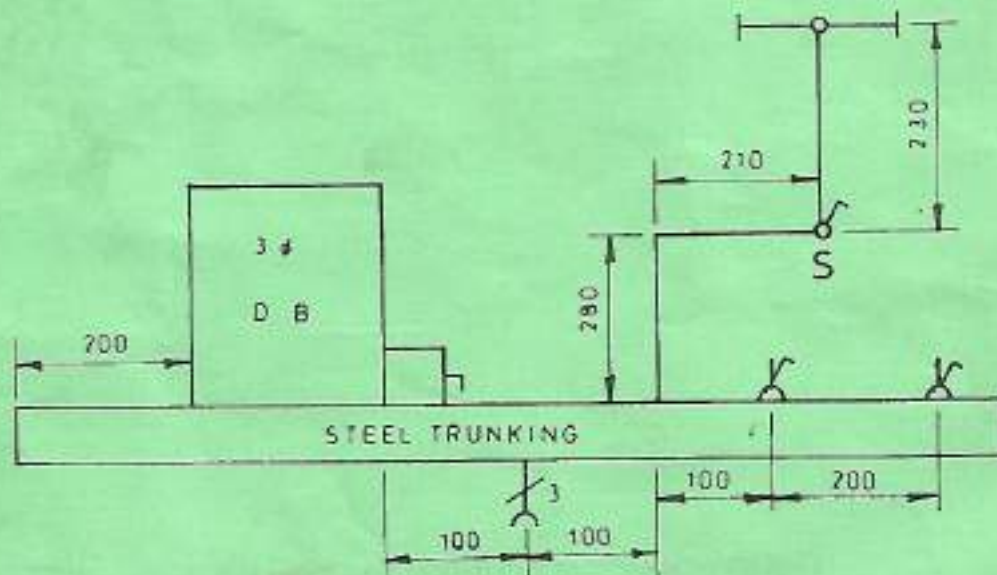


Fig 1 (b)



- (i) Draw the wiring diagram such that the:
- (I) lamp is controlled by the switch S;
  - (II) socket outlets are in ring;
  - (III) industrial socket outlet is connected to the isolator.
- (ii) Using steel trunking and heavy gauge steel conduit wiring system, install the circuits.
- (iii) carry out the polarity test.

(15 marks)

2. Figure 2 shows the layout of a three phase star-delta motor control equipment. All the control devices are pre-installed on a wooden surface.

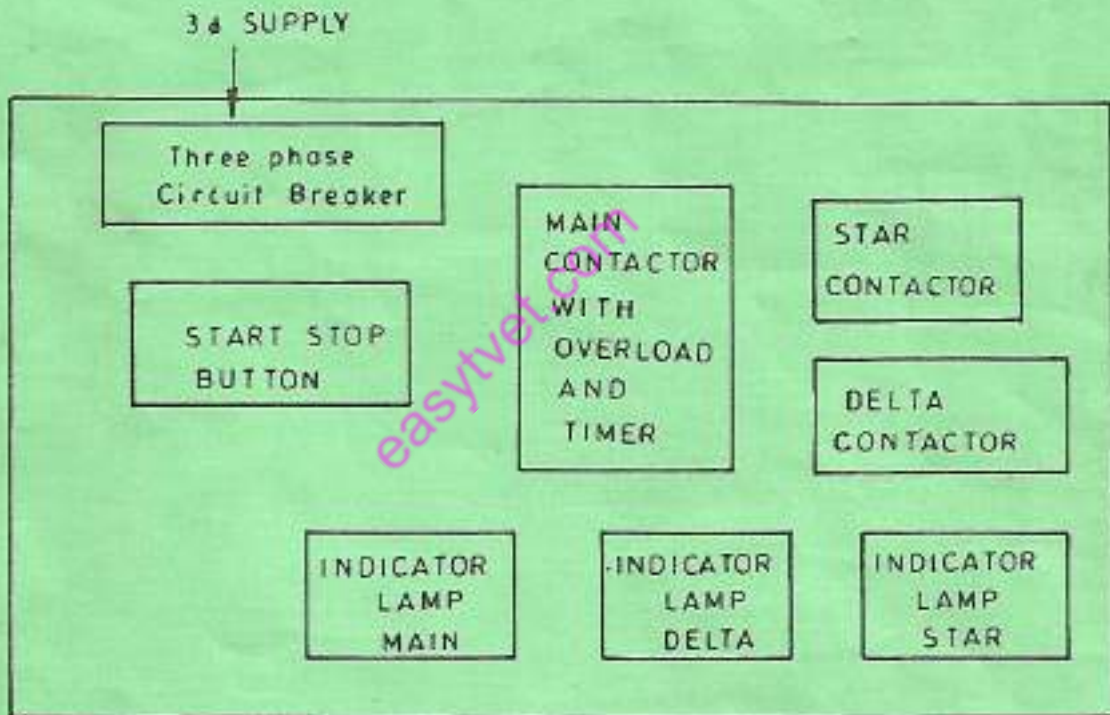


Fig. 2

- (a) Draw the wiring diagram of the control circuit.
- (b) Wire the circuit for star delta operation; (*Let the examiner check your work*).
- (c) Connect the power supply and then test for operation.

(25 marks)

3. Figure 3 shows the layout of three final circuits.

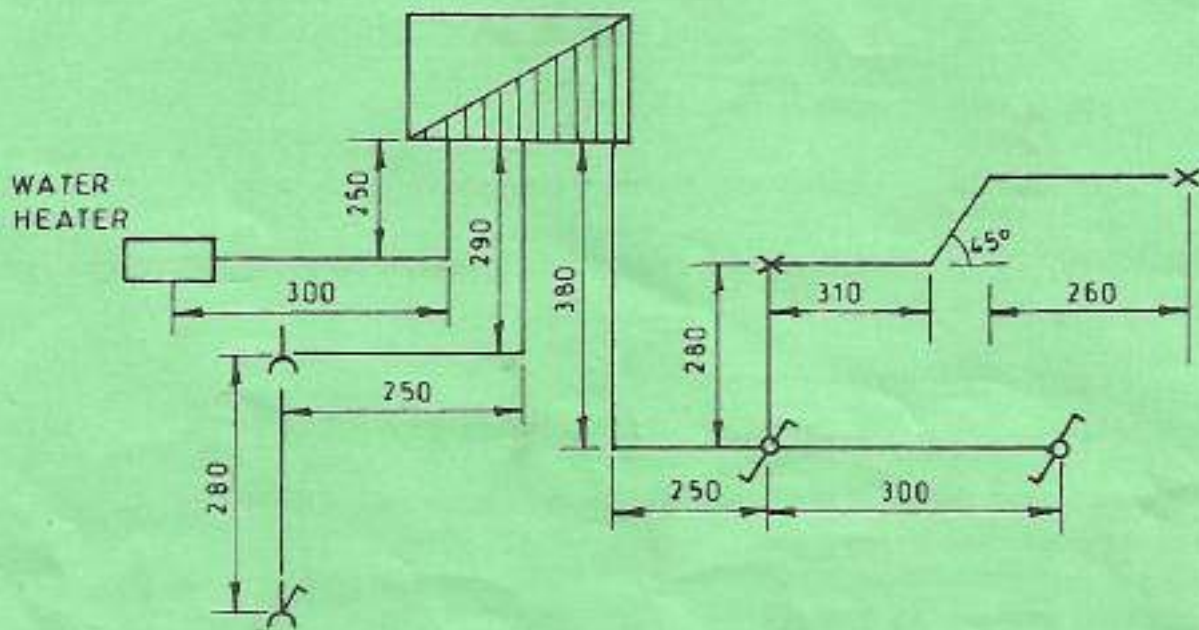


Fig. 3

- (a) Draw the wiring diagram such that the;
- (i) lamps are controlled from two positions;
  - (ii) socket outlets are in radial;
  - (iii) water heater is connected to the consumer control unit.
- (b) Using PVC heavy gauge conduit system install the circuits.
- (c) Carry out the continuity test.

(25 marks)

4. Figure 4 shows a door alarm circuit.

- (a) Using the components and equipment provided mount the circuit in a breadboard.
- (b) Power the circuit and move the magnet at a distance of 3 mm along the surface of the reed switch ( $SW_1$ ).



(c) Record the voltage at the test point TP<sub>1</sub> *1.7 Volts*

(d) State the behaviour of the buzzer.

*The buzzer produces a sound when the switch is magnetized.* (25 marks)

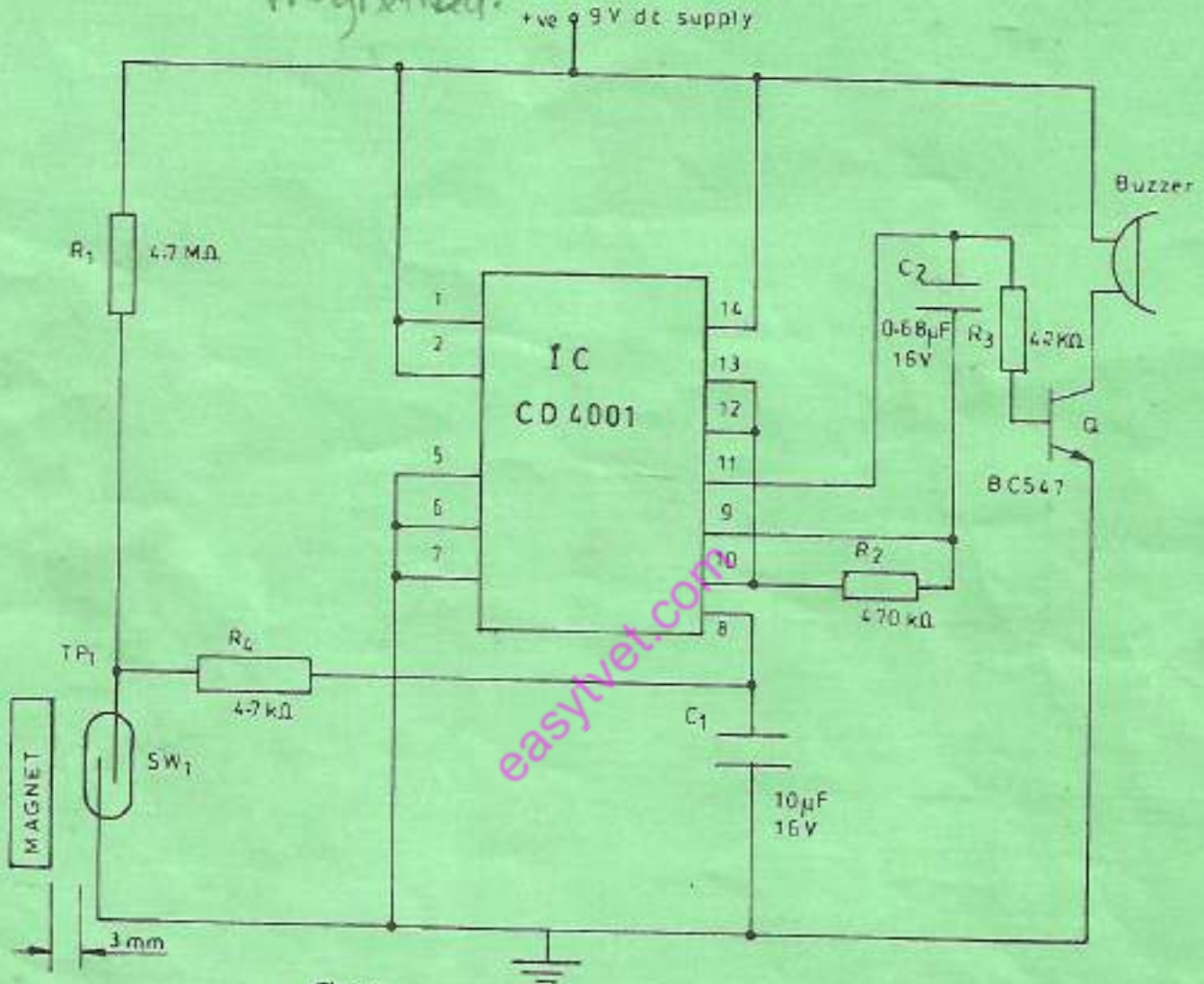


Fig. 4

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